The JOURNAL of GEOGRAPHY

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Dr. Blanchard, Professor of Geography at the University of Illinois, is a frequent contributor to the JOURNAL OF GEOGRAPHY and to a large number of educational and scientific magazines. He is joint author of several books including *Economic Geography of Europe*. This is another of his many studies which have centered in and about Europe.

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Mr. Hamilton, a first Honours Geography graduate from the University of Toronto, taught for nearly five years at the Welland High and Vocational School before he became an instructor in geography and history at the School for Teachers, Macdonald College, Quebec, Canada. He was one of four Canadian delegates who attended the International UNESCO Seminar.

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Dr. Barton was one of four delegates who represented the United States of America at the International UNESCO Seminar held at Macdonald College, Ste. Anne de Bellevue, July 12 to August 23, 1950.

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Dr. Calef of the University of Chicago is especially interested in physical geography and geography of western United States. During the past summer he continued his field study in Wyoming. His last article entitled "Slavic Expansion in the Lands of the Soviet Union" appeared in the December 1949 issue of the JOURNAL.

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Dr. Roucek is chairman of the Department of Political Science and Sociology at the University of Bridgeport, Bridgeport, Connecticut. He is a frequent contributor to both geographic and non-geographic magazines. His last article in the JOURNAL entitled "The Geopolitics of the Aleutians" appeared in the January 1951 issue.

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Mr. Richason, a graduate of Indiana University, has been teaching during the last two years at the J. Sterling Morton Junior College at Cicero, Illinois. He now has a leave of absence and is working toward his doctorate degree at the University of Nebraska.

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Annually two prizes, of $25.00 each, are awarded for outstanding articles published in the JOURNAL in the previous five years. The prizes collectively cover most aspects of geography and geographic education. They honor the author and a person who contributed notably to the success of the JOURNAL. The prize awards are named in honor of the following: Richard E. Dodge, Ray H. Whitbeck, George J. Miller, J. Paul Goode, Almon E. Parkins, Ellsworth Huntington, Isaiah Bowman, and Cora P. Sletten.

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VOLUME L SEPTEMBER, 1951 NUMBER 6

THE NARROW SEAS*

W. O. BLANCHARD
University of Illinois

The narrow extensions of the North Atlantic which separate the British Isles from the mainland of Europe are, in many respects, the most remarkable among the world's coastal waters. They contain the richest sea fisheries ever known. Over their surface moves the densest shipping of all the seven seas, and the moat they form for the British Isles has for centuries protected and nurtured the growth of democratic institutions and ideals for posterity, while the mainland was being periodically ravaged by war.

In size these waters are not conspicuous—indeed historians have long known them as "The *Narrow* Seas." In spite of this, their coasts are shared by every nation of northwestern Europe save Eire. Their small size actually enabled Britain for some 500 years to claim them exclusively as her own. Not 'til the early nineteenth century did her men-of-war cease to require a salute from all "foreign" ships sailing in those waters.

The waters making up "The Narrow Seas" have borne various names at different times and by various peoples. The name *North Sea* was first used by the Dutch because of its location north of their own *Zuider Zee* or South Sea. To the ancients, it was the *German Ocean,* while to the present-day Dane it is the *West Sea,* in contrast to the *Baltic* which they term the *East Sea.* To the geographers of old, the *English Channel* was the *British Ocean,* but the French cartographers very appropriately label it *La Manse,* i.e. "the sleeve," because of its shape.

EPICONTINENTAL SEAS

Like the Baltic, these are epicontinental waters, i.e. they lie upon the continental shelf, and the British Isles are *continental* islands.

* For list of other studies of European coastal waters see JOURNAL OF GEOGRAPHY, September, 1950, p. 232.

As shown in Fig. 1, this shelf extends some hundred miles beyond Ireland where it dips abruptly to the ocean depths.

During the Pleistocene the continental ice sheet advanced from Scandinavia across the land, now the North Sea, into eastern Britain. Together with contributions from several local centers, ice covered the island southward as far as the Severn and Thames.

FIG. 1.*

After the ice retreated crustal sinking submerged the broad low plain to the east, forming the North Sea. To the south the valley between France and Britain was likewise flooded and became the present day English Channel. Eventually the narrow isthmus separating the two waters was cut by storm waves making the strait of Dover. The preglacial land-water distribution and the drainage pattern as conceived by a geologist is shown in Fig. 2.

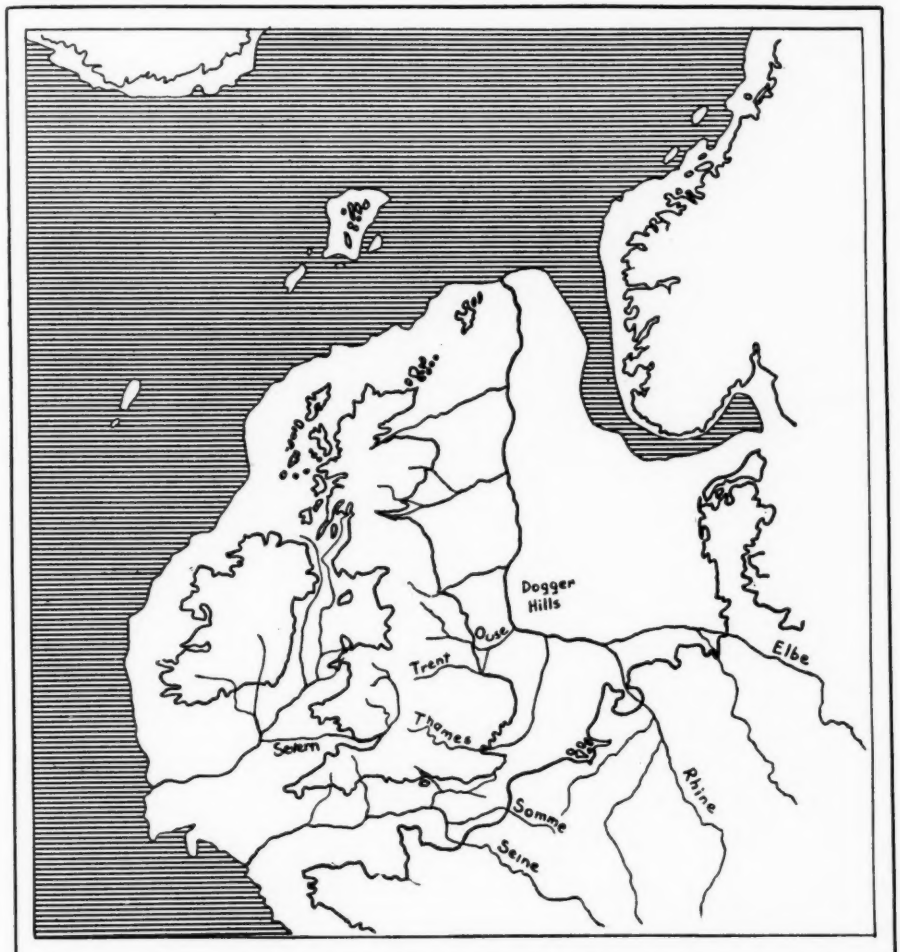
CRUSTAL MOVEMENT WAS RECENT AND SMALL

The crustal sinking which gave birth to The Narrow Seas was both recent, geologically speaking, and small in its vertical dis-

* Maps drawn by R. M. Beveridge, modified from originals by H. J. Mackinder.

placement. Both of these facts have had important economic consequences. The recency of the movement has left the bottom with many irregular features developed before submergence. The small vertical movement left the waters very shallow. These features have had an important bearing upon the currents and the fishing industry mentioned later.

Shallowness is the most striking physical characteristic of The



Probable flow of the rivers in the period of extensive emergence, immediately after the Ice Age.

FIG. 2.

Narrow Seas.[1] Dover Strait is a submarine ridge, nowhere over 180 feet deep. From it the bottom dips gradually northward reaching the edge of the continental platform just beyond the Shetlands.

This slope is interrupted by numerous elevations—*banks,* and depressions—*pits.* One of these plateaus, the Dogger Bank, covers some 7,000 square miles or approximately the size of Lake Ontario. At one point it rises to within 40 feet of the surface so that during a storm it can be located by the surf and muddy waters. A deep

FIG. 3. The broad beaches of the Channel Coast seen as summer resorts. This is in Sussex, south of London. (British Information Services)

trough—the Norway Deep—perhaps a submerged fiord, lies next to the Norwegian coast and southward enters the Skagerrak.

Westward from Dover the bottom of the English Channel slopes downward reaching the continental slope beyond Brittany and Cornwall. Here also are elevations, in one area reaching the surface as the Channel Islands, while nearby is a depression—Hurd's Deep—from 360 to 420 feet below the main Channel bottom.

The post-glacial relief of this region, except in Scotland and Norway, was not great, hence the coastline formed by submergence is mostly regular, the chief indentations being river mouths, Fig. 3. Both Norwegian and Scottish coasts are of the fiord type. On the

[1] The deepest point on the continental shelf, except for the Norway Deep, is the bottom of a fresh water lake—Loch Morar in Iverness Co., Scotland, 1,080 feet below sea level.

continent margin a belt of sand dunes extends almost 1,000 miles from northern Jutland to Calais, Fig. 4. Barrier beaches (Frisian Islands) and lagoons (the former Zuider Zee) make the larger indentions on the east coast. The English coast for almost 1,000 miles, both on the North Sea and the Channel shows few irregularities. The "White Cliffs of Dover," Fig. 5, are escarpments of very low table lands.

In general the best natural harbors are of the river type; Hull, Southampton and Plymouth being the exceptions. Many of the older ports established as far upstream as the tidal limit for seagoing craft have had difficulty with modern shipping. Silting and the increased size of vessels have posed real problems which have been solved in different ways, Fig. 6. Bruges declined to unimportance; London, Hamburg, Bremen dredged, but also have important outports located closer to the sea. Amsterdam, Rotterdam and Antwerp have kept in the front rank by dredging and canalizing to deep water.

The Dune Coasts of the North Sea

FIG. 4.

THE NARROW SEAS ARE SELDOM QUIET

Of these waters, the North Sea, especially, has earned a reputation for being on the move. Shallow, and lying in the path of the cyclonic storms, the surface is seldom placid. Winds, inflowing streams and the tides have combined to produce a complicated pattern of currents. Together with frequent fogs these movements have made the waters a severe testing area for navigators, quite in contrast to the Mediterranean.

Tides in this region are of unusual interest. The Atlantic tidal wave moving from the southwest encircles the British Isles, meeting again in the North Sea. Moving onto the continental shelf the wave changes markedly both in speed and form. It moves much more slowly but its height is increased. Tidal action on shores depends much upon the shape of the coast. In narrows like the strait between the Orkneys and Scotland a torrential tidal race is formed. It reverses with the ebb and flow and may reach a velocity of 12 miles per hour making this passage a dangerous hazard to shipping. Where there are V-shaped indentations, open toward the incoming tide, the wave may reach great heights. At Boulogne, e.g. near the Dover Strait, the tidal range amounts to almost 26 feet. The lower courses of most English rivers become arms of the sea at high tide and the ebb and flow is of great importance to ports located at the head of the estuary.

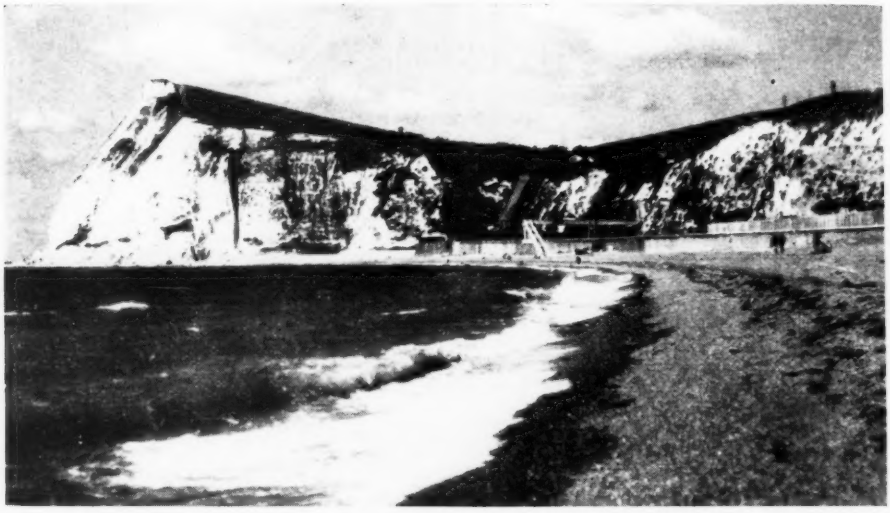


FIG. 5. Shakespeare's Cliff at Dover. (British Information Services)

The two tides which reach the North Sea from the north and south will meet in different phases at different places. Fig. 7 shows them meeting at the Thames mouth in the same phase, i.e. two high tides combine to form a very high tide of some 20 feet. Less than

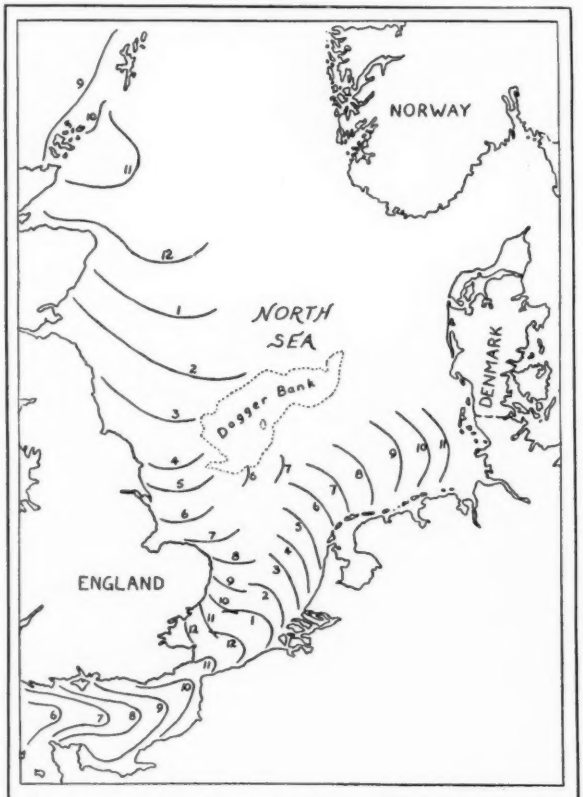
FIG. 6. Royal Docks, London. The view shows the extensive remodeling of the Thames (in the background) to accommodate modern shipping. (British Information Services)

100 miles away on the Netherlands coast they meet in opposite phase, largely neutralizing each other with a tide of some five feet. Thus the Thames estuary is subjected to vigorous tidal scour, while the quiet waters at the Rhine mouth are highly favorable to silting and the formation of a great delta. At Southampton apparently the constriction of the English Channel results in double high tides, a distinct asset to shipping.

FISHERIES IMPORTANT

Changing winds; inflowing waters of varying salinity, temperature, silt and plankton content; tidal currents; irregularities in the

bottom including extensive shallows—all combine to make for varied conditions which in turn favor a wide diversity of fish. The shallow sand banks, such as the Dogger, are free from excessive silt and rocks—favorable alike to spawning and to the use of trawl nets. In general the more favorable conditions for fish are in the



The hours of high water in the Narrow Seas, when noon is the hour of high water at Liverpool.

FIG. 7.

clearer waters near the British coast rather than the continent. In recent years the fishing industry has become a "big business" with highly centralized control and mechanized operations. Fig. 8 shows the congestion of fishing craft at Brixham, in Devon, on the Channel.

COMMERCIAL IMPORTANCE

The two waters discussed lie in the midst of the most active industrial and commercial regions of the earth. Because its peoples

have specialized in manufacturing, based, in part, on local coal and iron, they must needs import raw material and food in exchange for fabricated goods and coal. A political corollary has been the accumulation of extensive oversea colonial empires to better insure supplies and provide markets. This all adds up to commerce, and this in turn calls for large naval fleets for its extension and protection.

Statistical evidence of the importance of The Narrow Seas in

FIG. 8. Fishing harbor of Brixham on the Devon coast of the Channel.

commercial activities are found on every hand. The bordering nations rank among the world's leaders in the systems of inland transportation facilities—both water and land, in ship building, in registered tonnage of ocean shipping, in coal for both bunkering and export, in total foreign trade and in the number of great ports.

What of the future? The physical conditions which have favored transportation should guarantee its continuance tho its relative importance may decline with the commercial development of other parts of the world. The fishing industry should remain in first place. The value of the waters as a moat has definitely declined with the increased use of air craft, submarines, and long-range guided missiles. All in all, tho "narrow" in size, these waters must remain "wide" in their importance both to Europe and to the rest of the world.

AN INSTRUMENT AND METHOD OF TEACHING CONTOUR LINES

James W. Hamilton
Macdonald College

Abstract discussions of contour lines are difficult for pupils to understand. This topic requires visualization for proper understanding, and an adequate model for its illustration is easy to construct. The actual construction of the model could be used as an assignment for one or two pupils. (See sketch).

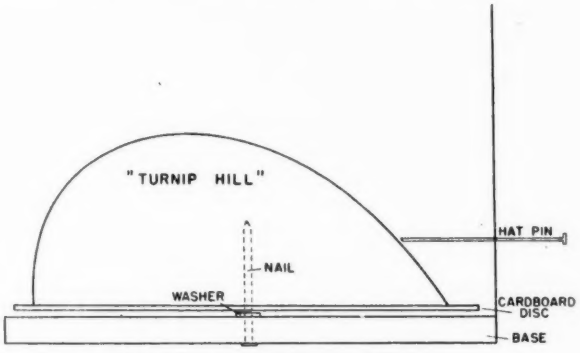
The materials required are as follows:

8 inch square of wood cut from the end of an orange crate.
A disc with 7.75 inch diameter cut from heavy cardboard.
A thin wood strip 6.5 inches long and 1 inch wide.
A steel or cardboard washer.
A long hatpin.
3 inch and a half nails.
Half a good size turnip cut from top to bottom.

Drive a nail thru the centre of the square board. Place the washer on the nail, then center the disc on the nail and force it down to the washer. Hold the wooden strip firmly against the square base and mark on it the level of the top of the disc. Remove the wooden strip and label the mark "sea level." Mark off half-inch intervals above the "sea level" mark, and label them successively 20 feet, 40 feet, etc., or whatever contour interval is used on the map series being studied. In the middle of each line marking

a contour height, drill a hole just large enough to admit the hatpin. Nail the strip to the baseboard.

To use the model, cut a good sized asymmetrical turnip in half from top to bottom. This is to represent "Turnip Hill," and should be asymmetrical so that contour patterns on different slopes may be observed. Mount the half turnip cut side down on the cardboard



CROSS SECTION OF CONTOUR MARKER

disc, where it will be held firmly by the nail. Insert the hatpin in the vertical strip at the 20 foot level so that its point is firmly in contact with the turnip. Rotate "Turnip Hill," keeping the hatpin in contact with the "hill," thus tracing on it the 20 foot contour. Repeat for successive contours. The contour lines may be emphasized by forcing brown wool yarn into the cuts made by the hatpin.

Visualization by this means enables pupils to grasp the idea of contours as they are drawn by surveyors. When viewed from above, the cartographic pattern is revealed. The choice of an asymmetrical "hill" enables the pupil to compare the pattern on gentle slopes with that on steep slopes; the judicious use of a potato peeler will enable the teacher to change the convex slopes to concave slopes, to reveal further differences in contour patterns. With care and experimentation, the skillful teacher will be able to cut "valleys" into "Turnip Hill" to illustrate the fact that contour lines point up-stream. A hill which is not too high and has a long gentle slope will be better for the latter illustration.

Geography can best be taught in the field but where this is not possible models offer an excellent means of illustration and help to make geography the laboratory science which it largely is.

INEXPENSIVE TEACHING AIDS

THOMAS FRANK BARTON
Indiana University

Can we pool our information concerning inexpensive teaching aids? The editorial office solicits your help if you believe in such a suggestion.

It occurs to us that a large number of teachers are using ingenious and inexpensive teaching materials. Will you share one of your devices with others? In this issue James Hamilton shares with us his experience about a device which has proven very successful in his classroom in presenting basic concepts about contours.

Not only are inexpensive teaching aids accessible to classroom teachers, but often prove to be superior teaching tools when compared with some factory-made materials. Pupil construction and/or assemblage, moreover, stimulates classroom interest and participation.

MANUSCRIPT NOT NECESSARY

You need not wait until you can prepare a manuscript, but send us brief suggestions by letter or post card. For example, a suggestion may be as brief as follows: "Use a discarded old globe or basketball tinted gold to represent the sun while demonstrating earth and sun relations." Of course, if you suggest the use of a cigar box with an adjustable lamp bulb for the construction of glass slides, it would be most helpful to send along a sketch showing dimensions.

INEXPENSIVE WEATHER AIDS

During the International UNESCO Seminar on "The Contribution of Geography Teaching to International Understanding" at Macdonald College last summer, the writer submitted the following list of weather aids to indicate the type of information which might be collected and then redistributed to classroom teachers thruout the world:

1. Pupil constructed arrow and sock wind vanes.
2. Kites (demonstrate differences in wind direction, unevenness of flow).
3. Shadow sticks with recording slot boards.
4. Fruit jar and bottle barometer.
5. Handwritten, typed or mimeographed Beauford Wind Scale charts containing arrow symbols and description of observable features in estimating wind velocity.

6. Gold-tinted ball (old globe, rubber ball, etc.) which can be used to represent the sun.
7. Cylindrical gallon tin fruit container or old crock for a rain gauge.
8. Two cylindrical containers with same diameters and a square board several inches wider than the diameters of the tin containers. These are to be used in collecting snow, converting it to water and thus measuring snowfall in terms of water.
9. Used larger calendars on which the numbers indicating dates are enclosed in squares for recording daily weather observations.
10. Handwritten, typed or mimeographed sheet with appropriate weather symbols for age levels.
11. Cloud charts (free from government or made from pictures, mounted and labeled by the pupils.)
12. Several old discarded pie tins (without holes) to be used in evaporation experiments.
13. Twelve discarded cylindrical olive bottles mounted in a stand to be used in showing monthly amounts of rainfall and yearly distribution.
14. A few discarded water tight containers (old jelly glasses of the same size) with tops into which gauzes of different sizes may be inserted for evaporation experiments.

Do you have further suggestions concerning teaching weather, or map reading, or landforms, or any other phase of geography? Do not hesitate because of doubt concerning age level, or use of your device, or an inability or time to make a perfect drawing; send along your suggestion and/or sketch.

STUDENT MAPPING OF AN AREA OF MULTI-STORY BUILDINGS

WESLEY CALEF
University of Chicago

Many geography teachers (the writer among them) are of the opinion that a major objective of field work in elementary courses in college geography[1] is to give the students a preliminary acquaintance with the aims and methods of the field activities of geographers; in order that the student may begin to understand the particular contribution which the geographic approach can make toward the solution of problems. But if these objectives are kept clearly in mind the selection of field exercises becomes a particularly puzzling problem.

In selecting a particular area and exercise for individual stu-

[1] This paper does not concern field work for courses in General Earth Science often listed in college catalogues under the heading "Geography." It pertains only to introductory courses in geography as such.

dent field work in introductory courses a formidable difficulty is encountered. No problem the solution to which requires much technical knowledge or skill can be assigned because the students do not have the knowledge and skill necessary to carry out the investigation. If, however, the student is assigned a problem so simple that a very obvious conclusion can be reached quickly, and subsequent amassing of data leads to no additional insights, the exercise

View looking northeast across Chicago's "loop." The area mapped and studied by the students is shown in the lower third of the photo except the extreme lower right hand corner. (Courtesy, Chicago Aerial Survey Co.)

then becomes a routine mechanical task devoid of interest or instructional value for the student. This paper reports on a field exercise used in recent geography classes at the University of Chicago which, somewhat unexpectedly, has proved especially satisfactory for introductory field work.

The writer's earlier selections of field assignments for individual student work had been in areas of the simplest land use and the students were assigned very specific, simple, and routine problems and procedures. Largely as an experiment the exact antithesis was tried. An area of extremely intensive land use was assigned for investigation and the general problem was purposely made very

vague and indefinite, altho coupled with certain very specific field procedures.

The class was divided into groups of four. Each group was assigned a four block area in Chicago's "loop"—an area almost solidly occupied by multi-story buildings with the most intensive space utilization in the entire metropolitan area (Fig. 1). Each student was then assigned one block and set the task of obtaining a record of the use of all rentable space within that block; not a small task in a block having two or three skyscrapers of 20 or 30 stories. Each member of each group was asked to prepare a paper on "land utilization" in the four-block area assigned to his group. The vague and general subject of the paper was deliberately left unexplained. Each group-of-four was told to prepare a map or series of maps of land utilization on the same four-block area. Upon completion of these assignments the class was abruptly told to break into groups of four in order that they might discuss the assignment and evolve a general work plan.

GROUP AND CLASS DISCUSSIONS

As soon as the group discussions began a flood of questions arose. In the early stages the instructor refused to answer the questions, but instead turned them back for discussion within the groups. Later on the group discussions were broadened to include the entire class. Some notion of the efficacy of the general procedure may be noted from the following list of questions raised and for which some sort of answer was formulated in the class discussions.

"Just what are we trying to find out about land utilization?"

This was the most important single question raised. The discussion of the question assisted greatly in aiding the students to see the type of problems that the geographer attacks, the similarity of these problems to those undertaken by other social scientists; and, most important, the distinctive method of approach and the type of evidence submitted by the geographer to the solution of these problems.

"How will space-use mapping aid in solving these problems and what will the resulting information show?"

The real question involved was that of relevance of data to the solution of problems; certainly a major consideration in any scholarly endeavor. Ancillary questions raised were:

"Is the amount of space used any indication of the importance of the use?"
"How accurate does our information need to be?"
"How accurately can the information be obtained in the time available?"

Each of the questions led to highly useful discussions of the whole problem of investigatory procedures in field work; including questions of available field time, limits of accuracy of data, and the contrasts between the theoretical and practical possibilities of obtaining data pertinent to the solution of a problem. Consideration of field tools and methods was raised by such questions as:

"Do we need a base map?"
"Where can we obtain a base map?"
"Would it be easier to make a base map than to find and modify one already prepared?"
"Are there published sources of space-use information for this area?"
"Could we get such information from the building manager?"
"Do we record our information on a map or in a notebook?"
"Do we need to make interviews?"

After the students' first sorties into the field another series of discussions ensued around such questions as:

"Are we supposed to explain the patterns we discover?"
"Do we have sufficient evidence to explain the land use patterns?"

These questions brought up the whole subject of the meaning of explanation, what constitutes explanation, its limitations, and its proper place in geographic investigation.

"Can we classify and then record in terms of the classification?"

In connection with the classification question the class discussed the problems of how to classify, the time to classify, and the relation of classification to the study objectives.

SOME RESULTS FROM THE EXERCISE

The special value of the indefinite and vague general assignment lies in the fact that the student in order to do a satisfactory job must first determine for himself precisely what it is he is trying to do and what a satisfactory performance would be. Most college students faced with an assignment are anxious to do a good job. Too often in individual field work the student's sole responsibility is to conscientiously carry out some mechanical task. Faced with the necessity of defining and planning a course of action he then begins to consider carefully and interestedly exactly the kinds of problems we want him to consider. His thought is stimulated by the necessity of arriving at some satisfactory answers to these

questions before he can have any assurance that his methods and results will be acceptable. By asking such questions as those quoted above, discussing them with his fellow students and the instructor, and finally arriving at some conclusions he begins to see, at least tentatively, some of the technical methods of the geographer and the logic behind them.

But what, the reader may well ask, is the advantage to be gained from studying a complex and intensively used area rather than a simple one? There are several, all of which are related to the intensity of use. The greatest advantage derives from the numerous sharp contrasts both in type and quality of use that will be encountered in very small areas. Moreover, there are vertical as well as horizontal contrasts. Some are easily and quickly visible but others become apparent only as the systematic inventory of space utilization is made. These sharp contrasts immediately lead the student to seek explanation. Some relationships are obvious but others will be revealed by seeking further afield for hidden areal or functional relationships. So many factors impinge on an area of intense land utilization that the student is stimulated by constantly gaining fresh insights into and discovering new areal and functional patterns.

The intensity of use makes it unnecessary for the student to cover large areas in order to carry out his assignment. Moreover, he is acquainted already with the characteristics of the various functional units he will encounter, and he need only ask a few questions in order to ascertain the nature of any unit with which he is unfamiliar. No technical knowledge is needed.

In gathering the data and especially in its presentation a number of simple technical problems will need to be faced. The author is aware of few papers dealing with techniques of the field study of multi-story buildings or with their cartographic presentation. No references were given the students. Hence they were forced to devise their own field and cartographic techniques. This process makes them much more aware of the difficulties inherent in this very general scientific problem.

One group of students decided to classify before starting to map. After completing their mapping in this manner they discovered on comparing notes that one of the most important space-use differences in their area was a concentration of law offices in one section and of engineering firms in another. Since they had mapped them all as "professional" their maps failed to indicate one of the

most important areal differences, and additional field work became necessary to bring this out. It seems likely that these students henceforth will be more aware of the problem of classification and the dangers of premature classification than any amount of lecturing could have produced.

Interviewing experience brought equally instructive results. Students repeatedly would receive irreconcilable answers to questions relating to locational factors for functional types. Sometimes three and four partially conflicting statements would be obtained. Almost every student became thoroly aware of the necessity for evaluating, discounting, and analyzing interview results.

The exercise is especially useful to the instructor with reference to the beginning geography major. A careful analysis of the presentation of his field results will reveal many things about the student himself. Some students present little except an inventory of what is in the area, revealing no insight whatever as to generalizations, patterns, or conclusions. Other students will submit really remarkable analyses of land use. Moreover, since they are allowed wide latitude in methods of investigation (other than the space inventory) the results reveal their propensities with regard to such work. Some students will make numerous interviews and obtain valuable information. Others will depend entirely on their own unaided observation. Still others will supplement a minimum of field work with extensive library research. Some reports make liberal use of photographs, sketches, and subsidiary maps. Others make practically no use of illustrative material.

The writer found no difficulty in administering the exercise to classes of 25. To obtain good results, however, it is probable that this is near the maximum.[2]

Checking the accuracy of the inventory results is easy since sample checks are sufficient. Two or three floors in two or three buildings in each block can be checked very quickly. The writer made a satisfactory sample check (in advance) for the work of 50 students and obtained a general idea of the type of development in the area in less than three days of field time.

The great majority of college students today are enrolled in schools in or near areas of multi-story buildings and intensive land use. For those instructors interested in furnishing the type of field

[2] Tho many introductory courses have large enrollments these large groups usually are divided into smaller groups for laboratory and field work, and it is with these smaller groups that the exercise could be used.

experience set forth in the opening paragraphs, the writer would recommend a trial of the exercise which this paper has described.

THE GEOPOLITICS OF GREENLAND

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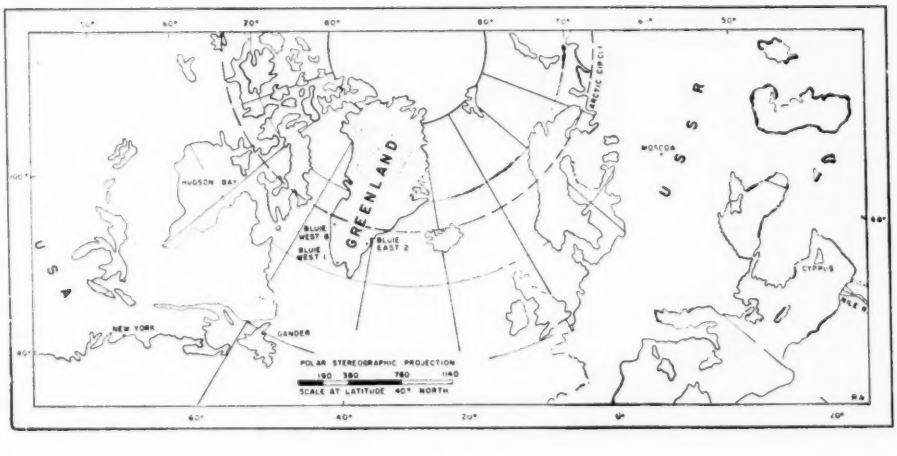
Greenland is an enormous hunk of ice, three times as big as Texas, with a narrow fringe along the southern shore where a few Eskimos and fewer Caucasians scratch out an existence. During World War II the United States spread a protecting wing over this inhospitable territory. The step was taken just in time. Nazi planes had flown over Greenland by 1941; in July that year, three pro-nazi ships from nazi-occupied Norway hove to off Greenland and one landed a party of meteorologists. The nazi occupation forced military action upon the Allies, who were aware 1. of the pre-war flights over the Greenland ice-cap; 2. of its location as a base for short-hop flights from North America to northwest Europe; and 3. of its importance in the protection of the North Atlantic shipping lanes (see map). The nazi meteorological stations in northeast Greenland and the need to import cryolite (essential for the defense industries, especially in manufacture of aluminum) influenced our action. In Washington Secretary of State Cordell Hull and Minister of Denmark Henrik de Kauffmann signed a formal treaty permitting the United States to erect and maintain armed bases on Greenland's soil. These bases were 300 miles nearer to England



than the ones that the United States had at Newfoundland. They were within shooting distance of the area outlined by nazi Germany as its "war zone." The United States promised to respect Greenland as a colony of Denmark and to yield its rights to the bases when the war emergency was over.

Iceland, whose king was also the King of Denmark, was geographically outside the scope of the Monroe Doctrine—but not Greenland, which President Roosevelt considered more American than European. Mr. de Kauffmann, who signed the treaty on behalf of his king and country, did so without first getting the approval of his government. Mr. de Kauffmann explains that his government at that time, was a virtual prisoner of Berlin. He did not ask permission because he knew his government would be compelled to say "no." Moreover, Germany's conquest of Denmark automatically acquired a conqueror's title to all Danish territory—including Greenland. For various reasons, including the British fleet, Germany did not take possession of Greenland, but her protests proved to be debatable.

GEOGRAPHY

Most people in the United States know Denmark's North American possession only by the good old hymn which begins "From Greenland's icy mountains to India's coral strands."

A Danish colony, this largest island in the world, and Denmark's last remaining overseas possession, is situated between the North Atlantic and the Polar Sea. Of its 839,782 square miles, more than 75 per cent is covered by an icecap.

Greenland and Iceland are an extension of Canada. A map shows how easy it is for big bombing planes to hop from Norway to Iceland to Greenland to Canada, along much the same Great Circle route that Germany's von Gronau flew in 1930.

The whole of Greenland except for a narrow strip along the west coast and one point midway on the east coast is a glacial plateau. What land is visible is mainly lava rock, granite and some marble. The only "trees" are a kind of willow and birch that crawl along the ground.

The inhabited area along the south shore is not quite so bleak, but bleak enough. Homes are made of stones, turf or imported wood. Tallest trees in Greenland are the dwarf willows, which sometimes grow as high as six feet. They are rare. Yet the farmers

squeeze from the soil crops of spinach, rhubarb, lettuce, carrots and turnips.

Covering almost all of the huge island of Greenland is a cake of ice a mile thick, held in place by a ring of coastal mountains that form a natural bowl. Each year the heavy snows pile onto the surface in the middle of the icecap and press the snow from previous years into a rock-hard frozen mass. Only near the outer edges does the great cap ever thaw. This huge block of supercooled ice affects the rest of the world much as an open-doored refrigerator affects a room in which it stands. Scientists have long suspected that Greenland's icecap manufactures much of the bad weather that sweeps over Europe and perhaps over the entire northern Hemisphere. But to verify this theory, they needed daily on-the-spot reports of icecap weather conditions. To get them, Arctic explorer Paul Emile Victor, with French government backing, organized a scientific expedition and set out to establish a year-round observation post at the center of the inland ice.[1] Only one other party, composed of five men, who ventured onto the cap by dog sled in 1930, had ever before set up an over-winter camp at the icecap's center. Of the five, two froze to death on the way out, and a third was crippled for life by the terrible cold. Greenland stretches over arctic and subarctic zones. The ice-free terrain is mountainous and deeply indented with the largest fjord-system in the world—and some of them are over 1,000 meters in vertical depth. The coast line is liberally dotted with skerries and small islands. But of the 2,182,000 square kilometres, 1,860,000 are covered by permanent inland ice. The left-over land offers almost no possibility of cultivation of grain crops, but hay has been grown in the southwest and a small sheep-farming industry has been established. The native economy is based largely upon the resources of the sea; seal-hunting and fishing, the last being the most important industry.[2] The southwest produces considerably more fish than does the northwest coast. But the most valuable single resource is the cryolite mine at Ivigtut (in the southwest)—the only cryolite mine in the world, whose production commands a high

[1] For the evidence of Victor's accomplishments, see: "On the Great Icecap," *Life*, XXVIII, 28, June 26, 1950, p. 80 ff.

[2] These changes in the maritime fishery have been made possible by spectacular changes in the hydrography of the Greenland waters in recent years; for details, see: M. J. Dubar, "Greenland During and Since the Second World War," *International Journal*, Spring, 1950, pp. 121-140.

price (The Danish Government holds 50 per cent of the shares of the company operating the mine, the "Cryolite Company Oresund," formed in 1940). The profits from the mine usually make up the deficit of the rest of the colonial enterprises. Marble is also quarried and deposits of pure lead ore and uranium layers have been discovered (except for cryolite, trade is a crown monopoly). In the geological field, a useful deposit of lead was discovered in King Oscar Fjord in northeast Greenland in 1948.

Harbors are free of ice only a few weeks each year, which means plenty of trouble for ships and seaplanes. Fields might be laid out in some of the larger valleys for landplanes, but high peaks make landing hazardous.

The population is strongly concentrated on the west coast. Eskimos enjoy the few days of sunlight Greenland's Arctic climate gives them. They live a primitive life, until recently uncomplicated by the white man's battles for tribal supremacy.

Greenland, like the Aleutians, is a weather cauldron. Europe's weather is influenced by the course of Greenland's weather (for that reason, the nazis and Allies established weather-reporting stations on the Arctic island).

HISTORY

Erich the Red, a Norseman, is reputed to have been the first white man ever to set foot on this desolate territory which America is now pledged to protect. When he arrived in 985 A.D. Erich called it "Greenland" not because it was "green—" which it decidedly was not—but to make it sound attractive to prospective colonists. Twenty-five shiploads of pioneers fell for Erich's tall tales and sailed with him the following year to establish colonies on Greenland. If Greenland then was anything like Greenland today, the colonists had a cool reception. Best description of the island was made by a pre-Hitler German scientist who called it an enormous bowl ringed by mountains and filled with a cake of ice. That ice cake is 1,650 miles long, about 600 miles wide and two miles thick in spots. The top of it may be the coldest place on earth; no scientist has ever stayed there long enough to make sure. Great chunks of the ice break off from time to time and float down into the Atlantic where they melt in the Gulf stream.

The Greenlanders were great voyagers. Besides discovering and colonizing the North American continent, they penetrated far

beyond the Arctic circle at a time when Europe considered it entirely impossible. They carried many products from America to Europe, namely, timber, eiderdown, walrus ivory and hide, animal fats, sealskins, and furs. In 1261 the Greenlanders joined Norway in political union, and eventually became an outright colony of Norway. The trade of Greenland suffered and eventually died due to Norway's monopoly.

Once a year a ship from Norway brought supplies. After about 1400 the supply boats stopped coming regularly. Three centuries passed with hardly any European contact. When Hans Egede, Danish missionary, landed there in 1721, he found not a single trace of the medieval Norse settlers, who by that time, had died out or become assimilated by the Eskimos. Egede, however, by settling there, laid the foundations of Greenland's modern life.

Greenland's modern history starts in 1721, when Hans Egede landed at the mouth of Godthaab fjord. In 1728 he founded the Godthaab settlement. Colonization in East Greenland started in 1894 at Nag-massalik, and in 1924 a new settlement was founded in East Greenland at Scoresby Sound. In 1774 the Danish government took over Greenland's trade, and all economic operations since have been carried on by a state monopoly. The administration was in Copenhagen, acting thru two Landsfogeder (administrators resident in Greenland, one in South Greenland at Godthaab, the other in north Greenland at Hodhavn). In April, 1940, the nazis invaded the island. Cut off suddenly from Copenhagen, the two administrators functioned on the basis of paragraph 3 of Article 10 of the 1925 Constitution:

"The Administrators, as the representatives of the Danish Government in Greenland, are to be considered the responsible authority in the country and can in exceptional instances (overordentlige tilfaelde) take such measures as the interests of the population may demand." In the United States, Danish Minister Henrik de Kauffmann set up an "American Danish Greenland Commission," on which Denmark, the United States and Canada were represented. Meanwhile, in Greenland the Landsraad of South Greenland met with its fellow body from North Greenland at a joint meeting at Godthaab, and continued their meetings thruout the war. Later the American Danish Greenland Commission was replaced by the Greenland Delegation in New York, a body formed in 1940, by Eske Brun heading a selected body of Greenland experts

in various fields (radio, cryolite mine, mechanical equipment, etc.), and this body handled purchasing and marketing.

Starting in May 1940 the cutters and smaller crafts of the U. S. Coastguard started landing on the coasts. After June, 1940, consulates of Canada and the United States were opened in Greenland, which also operated as diplomatic offices—since, at that time, Greenland was considered a self-governing country. In 1941, United States military bases were established in Greenland, and in November of that year the Greenland delegation became a division of the Danish Consulate-General, under the Danish Minister who, in turn was recognized by Washington as the direct authority for United States-Greenland business. Cordell Hull and de Kauffmann signed an agreement on April 9, whereby the continued sovereignty of a free Denmark over Greenland was recognized, but gave the United States the right to build bases and other installations for the defense of Greenland as well as for the western hemisphere in general. Two airfields were built on the west coast and one on the east, and a small emergency landing strip a few miles south of Godthaab.

With the nazi departure from Copenhagen, the Greenland Assembly (Lands-raad) passed a resolution in 1945 which, if confused, asked, in general, for self-government. But the Greenlanders did not succeed in convincing Copenhagen that they wanted a central, responsible administration and that they wanted to give up the Government trade monopoly as well as the policy of the "closed shore." In 1950 the military air bases were maintained approximately as before by the United States and the Greenland Defence Agreement was still in effect.

U. S. World Strategy and Greenland

In the late summer of 1941, an expedition commanded by the Arctic flier Bernt Balchen sailed northward to establish an American air base on the west coast of Danish-owned Greenland. The lonesome camp they set up and the field they hacked out during the frigid, dark winter eventually branched out into three great bases —Bluie West One on the south tip of the rocky, ice-blanketed subcontinent, Bluie West Eight, 700 miles to the north, and Bluie East Two, 500 miles north. A network of satellite radio and weather stations completed America's northernmost front. At its operational peak in the summer of 1944, Greenland helped move 1,500

bombers a month and an equal number of transports over the Great Circle route. Its meteorological stations provided vital weather reports to planners of combat operations from Normandy to Berlin. And those who envisioned another war, fought across the polar ice cap, saw even greater strategic possibilities in Greenland.

But the Danes had agreed in 1941 to American occupation only while "present dangers to the peace and security of the American continent" lasted. In 1946 Danish newspapers began telling alarmed readers that the United States was expanding and fortifying the Bluie bases instead of evacuating them. Moscow, too, complained about the continued American occupation—for obvious reasons, in view of the growing importance of polar strategy. In January, 1947, the Danes, partly at Soviet urging, decided they had had enough of Bluie. In Copenhagen, Acting Foreign Minister Frants Hvass said the government was considering denouncing the 1941 agreement outright. He had not even waited for Foreign Minister Gustav Rasmussen to return from Washington. On December 5, 1946, Rasmussen had asked Secretary of State Byrnes to order an American withdrawal. Denmark, Rasmussen argued, then had sufficient technicians to replace some 1,000 Americans who still remained in the Greenland air, weather, and radio stations. But Byrnes—who had omitted Greenland from his accounting of American overseas troops to the UN Assembly in December 1946—made no promises to modify the American plan to maintain two air groups in the Greenland-Newfoundland area after July 1.

Since the United States air bases on Greenland lie athwart great-circle air routes between the United States and northern Europe and Asia their great strategic importance cannot be overestimated. Large enough to cover nearly all the United States east of the Mississippi, Greenland groans under a ponderous icecap that leaves only a slim margin of land sticking out around the edges. On this margin, between "Greenland's icy mountains" and the sea, lies a trio of airfields of interest in any American-Danish discussion —one near Julianehaab, close to the southern tip of the island; one just north of the Arctic Circle on the west coast; and one near Angmagssalik on the east coast opposite Iceland.

In June, 1950, the United States announced it had no plans to evacuate its military forces from Greenland. There had been a steady reduction in military forces on the North Atlantic land

since the end of World War II. Army troops left completely many months ago and the Air Force is steadily scaling down the forces maintaining a few bases. But permanent military forces for Greenland and their nationality was henceforth to be a matter for the North Atlantic regional planning group of the North Atlantic Treaty Organization.

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GEOGRAPHY IN THE JUNIOR COLLEGES OF THE UNITED STATES

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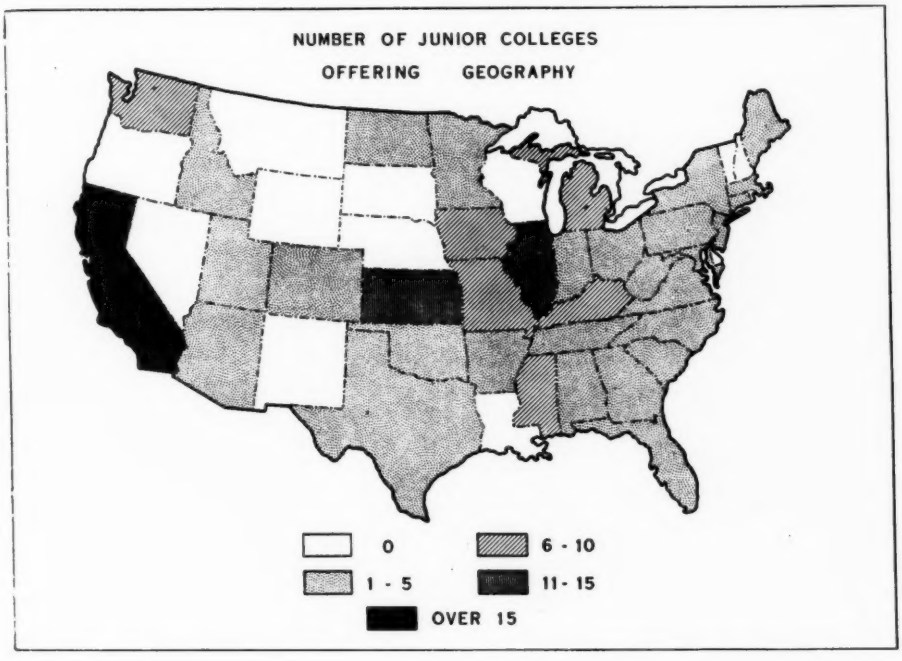
INTRODUCTION

In an effort to determine the status of geography in the curricula of the junior colleges, as well as the distribution of junior colleges offering geography, a questionnaire was sent in the fall of 1950 to all junior colleges in the United States which are members of the Association of American Junior Colleges having an enrollment of over 100. About 65 per cent of the questionnaires were returned, representing over 70 per cent of the total number of students enrolled in all junior colleges in the fall of 1950. Fifty-six per cent of the schools that returned the questionnaire reported offering geography. Assuming, however, that geography is not included in the curricula of those schools not replying, then only 35 per cent of the junior colleges in the United States are offering courses in geography. Questionnaires were received from over 66 per cent of the publicly controlled junior colleges and from 57 per cent of the privately controlled junior colleges. Ninety-eight public

junior colleges, or 64 per cent of those replying, offer geography in their curricula, while 40 private junior colleges, or 43 per cent of those replying, offer geography.

DISTRIBUTION OF JUNIOR COLLEGES OFFERING GEOGRAPHY

The states of California, Illinois, and Kansas collectively contain about 33 per cent of the junior colleges in the United States offering geography (see map). These states also rank high in total number of junior colleges that are members of the Association of American Junior Colleges with an enrollment of over 100. California contains 35 such institutions, Illinois 24, and Kansas 17. Nine states (California, Kentucky, Illinois, Michigan, Mississippi, Missouri, Iowa, Kansas, and Washington) collectively incorporate over 60 per cent of the junior colleges in the United States that offer geography. Thirty-eight per cent of the junior colleges to which questionnaires were sent are contained in these states, and 43 per cent from which questionnaires were returned. Texas, on the other hand, with 48 such junior colleges, from which 40 per cent of the questionnaires were returned, representing 74 per cent of the total junior college enrollment of that state, reported only two schools offering geography. Idaho, Arizona, and Indiana reported



that all such junior colleges offer geography, but these states contain only three, two, and one such institutions respectively.

The states of the South and East (from Arizona to Maine) contain 215 junior colleges, or about 55 per cent of the United States total. However, in this area, containing over one-half of the states of the United States, there are 46 junior colleges offering geography, or one-third of the total number of junior colleges offering geography in the United States. Within this area only Arizona, Florida, South Carolina, West Virginia, and Maryland reported that 50 per cent or more of their junior colleges offer geography.

The states of North Dakota, Nebraska, Kansas, Colorado, Montana, Idaho, and Utah together contain 37 junior colleges. Twenty schools reported offering geography, more than half of which are located in Kansas. Of this group, four states (North Dakota, Kansas, Utah, and Idaho) reported that 50 per cent or more of their junior colleges offer geography. The three Pacific Coast states contain 45 junior colleges of which 27 offer geography. Twenty-one of these are located in California.

Ninety-one of the junior colleges to which questionnaires were sent are contained in the centrally located states of Minnesota, Michigan, Ohio, Indiana, Illinois, Iowa, Missouri, and Kentucky. Forty-five of these junior colleges offer geography, or about the same as the total for the states of the South and East which incorporate more than twice as many junior colleges. Of this group, however, only Michigan, Indiana, and Kentucky reported more than 50 per cent of their junior colleges offering geography. On the other hand, 25 per cent of the junior colleges offering geography in this group are located in Illinois.

The Association of American Junior Colleges reports no junior colleges in New Mexico and Nevada; none in Wisconsin which are members of the Association; and only one each in Wyoming, South Dakota, and Delaware from which no replies to the questionnaire were forthcoming. Consequently, these states do not appear in the tabulation of results.

STATUS OF GEOGRAPHY IN THE JUNIOR COLLEGE

Geographic education is a timely field of action for the junior colleges. After two world encompassing debacles in the past half-century, the United States today finds itself the leader of the free world. It is important, therefore, that the junior colleges of the United States, an important part of the educational system of the

United States, incorporate within their curricula those courses that will lead to an intelligent citizenship in this dynamic world. The kind of education that will produce this is an education predicated on information of all peoples and environments of the earth. The kind of education that will produce the requisite understanding of other peoples of the world must include geography. "Geography . . . should expectably be the basis of all education on earth, and certainly should be highly regarded as an educational instrument in cultivating world peace."[1]

In many cases the majority of the junior college students are terminal students, and as a result, the geography that they receive in these institutions will serve as an introductory as well as a concluding course. Therefore, if the junior college is to prepare adequately this large category of students for good citizenship thru a better knowledge of the world and its peoples, it must not only include geography in its curriculum, but stress it as a most vital subject.

In some states an elementary teacher's certificate may be obtained upon the completion of two years of college work. An impressive percentage of junior college students profess an intention of majoring in education and well may be the elementary school teachers of tomorrow.[2] For many of these future teachers, the junior college geography will be the only geography they will receive. If the values of geography are not emphasized for these future teachers in the junior colleges, then in the elementary schools it will remain neglected in favor of other aspects of the social studies in which the teacher has more preparation.[3]

Before 1941, all too many people believed that geography was no more than a grade school subject in which the states and state capitals were memorized. Shortly after the attack upon Pearl Harbor, John W. Studebaker, then United States Commissioner of

[1] George T. Renner and Paul F. Griffin, "Geographic Education for Survival," *School and Society*, Vol. 70, No. 1807, p. 82.

[2] Eighty-three junior colleges answered the question asking for the percentage of geography students majoring in or professing an interest in education, social science, natural science, business, etc. The schools reported that about 40 per cent of these students were majoring in education.

[3] Junior college geography teachers may be interested in reading Ernest S. Dix, "Bringing Grade School Projects into the College Classroom," THE JOURNAL OF GEOGRAPHY, Vol. XLIX, No. 8, November, 1950, pp. 329-336. A similar program was inaugurated by this author for those students professing an interest in elementary education at Morton Junior College in 1950-51. The program stimulated a great deal of interest and on the whole was successful.

TABLE 1

State	Public Junior Colleges		Private Junior Colleges	
	Total Number*	Number that reported offering Geography	Total Number*	Number that reported offering Geography
Alabama	0	0	6	1
Arizona	2	2	0	0
Arkansas	5	1	2	0
California	34	20	1	1
Colorado	6	2	2	1
Connecticut	0	0	6	1
Florida	3	2	3	1
Georgia	9	1	5	0
Idaho	2	2	1	1
Illinois	13	11	11	1
Indiana	1	1	0	0
Iowa	8	5	5	1
Kansas	12	8	5	3
Kentucky	2	1	10	7
Louisiana	3	0	0	0
Maine	0	0	3	1
Maryland	3	2	1	0
Massachusetts	1	1	12	0
Michigan	9	8	2	0
Minnesota	9	2	1	0
Mississippi	11	5	4	1
Missouri	7	3	8	3
Montana	2	0	0	0
Nebraska	2	0	0	0
New Hampshire	0	0	1	0
New Jersey	4	2	5	1
New York	7	0	9	2
North Carolina	2	0	10	4
North Dakota	3	2	0	0
Ohio	1	1	4	1
Oklahoma	10	5	1	0
Oregon	0	0	1	0
Pennsylvania	8	0	5	2
Rhode Island	0	0	2	0
South Carolina	0	0	2	1
Tennessee	1	0	4	3
Texas	30	2	18	0
Utah	2	1	0	0
Vermont	0	0	2	0
Virginia	2	1	6	1
Washington	9	6	0	0
West Virginia	1	1	1	0

* Total number here means all junior colleges to which questionnaires were sent. See text.

The District of Columbia contains 5 privately controlled junior colleges, two of which reported offering geography.

Education, declared, "Now is the time to begin really to teach the American people geography. Apart from rather backward nations we are more illiterate geographically than any civilized nation I know. . . . If we can get out of that policy an intelligent understand-

ing of the world . . . I would like to know how to do it.''[4] Many school administrators saw that a knowledge of geography was needed by young people if they were to solve their problems adequately, and many acted accordingly.

About 55 per cent of the junior colleges in the United States reported that World War II stimulated an interest in geographic education, and 31 per cent reported that geography was not taught before 1941, however several schools in the latter group were organized after 1941. Many returning soldiers were seeking information about this ''one world'' in which and for which they had fought. It appears, however, that this is no longer the case or that student interests are no longer heeded by junior college administrators since 84 per cent of the junior colleges reported that the present international unrest has not caused an increased interest in geography. Altho 96 per cent of the junior colleges in the United States reported that their students enter college with little or no previous geographic training, many are doing nothing to correct the situation during their two years in instruction.

In the role of a community college, the junior college draws its students from the immediate area in which it is located. As a result, this type of educational institution has the opportunity of immediately reflecting social aims. Thru geographic education in the community college there could be had a clearer understanding of many local, national, and international problems which would make that community a better place in which to live.

GEOGRAPHY COURSES

Only six states have junior colleges offering in the aggregate more than 10 courses in geography (see Table 2). Seventy-six junior colleges reported offering one course in geography and 62 more than one course. Physical geography is offered by 61 per cent of the junior colleges offering geography, and economic geography by 68 per cent. Other geography courses mentioned on returned questionnaires are listed in Table 3.

From Table 3 it is seen that only 11 junior colleges in the United States offer courses on the home continent, North America, and

[4] National Conference of College and University Presidents, Baltimore, January 3, 1942, as cited in George T. Renner and Paul F. Griffin, "Geographic Education for Survival," *School and Society*, p. 82.

TABLE 2

NUMBER OF ACTUAL GEOGRAPHY COURSES OFFERED BY JUNIOR COLLEGES BY STATES

Alabama	7	Missouri	13
Arizona	4	Montana	0
Arkansas	1	Nebraska	0
California	46	New Hampshire	0
Colorado	7	New Jersey	5
Connecticut	1	New York	2
Florida	4	North Carolina	7
Georgia	2	North Dakota	3
Idaho	5	Ohio	7
Illinois	23	Oklahoma	8
Indiana	2	Oregon	0
Iowa	6	Pennsylvania	3
Kansas	13	Rhode Island	0
Kentucky	13	South Carolina	1
Louisiana	0	Tennessee	6
Maine	1	Texas	6
Maryland	2	Utah	7
Massachusetts	1	Vermont	0
Michigan	18	Virginia	2
Minnesota	2	Washington	8
Mississippi	7	West Virginia	2

only two junior colleges offer courses on Asia and Europe, the current areas of political unrest.[5]

When treating any junior college course, the question arises concerning the status of the junior college itself; whether it is a part of secondary or higher education. Almost all geography courses offered by junior colleges parallel those of the universities, but only about 35 per cent of the junior colleges reported that an effort is made to articulate junior college geography with that of the high school. This is particularly grievous in view of the fact that many junior colleges are housed in the same plant as the high school.

Seventy per cent of the junior colleges offering geography reported that it is taught in the Social Science Department, about one-fourth offer geography in the Natural Science Department, and the remainder reported that it is taught in the Business Administration or Commerce departments.

A laboratory is not included in any geography course by 89 per cent of the junior colleges offering geography and 63 per cent do not employ field trips as a teaching aid.

[5] An interesting article on a world geography course with the terminal student in mind has been written by Meyer Weinberg, "Geography and General Education: A Junior College View," *Junior College Journal*, Vol. XXI, No. 6, February, 1951, pp. 341-343.

TABLE 3

Title of Course	Number of Junior Colleges in which offered
Economic Geography	92
Physical Geography	81
Meteorology	12
Geography of North America	11
Regional Geography	11
Conservation	7
Human Geography	6
Political Geography	5
Regional Geography of State	5
Geography of Asia	2
Geography of Europe	2
Geography of South America	2
Historical Geography	2
Geography of Africa	1

GEOGRAPHY ENROLLMENT

Of the more than 300,000 students enrolled in junior colleges in the United States in the fall of 1950, only about 2.1 per cent were studying geography. Even in California where 60 per cent of the junior colleges offer geography, only four per cent of the total junior college enrollment was in geography. In such states as Michigan, Illinois, Missouri, and Kansas with comparatively high geography enrollments (see Table 4) the percentage of students enrolled in geography averaged only about 5 per cent. This ranged from two per cent in Illinois to 8 per cent in Kansas. Assuming

TABLE 4

APPROXIMATE NUMBER OF STUDENTS ENROLLED IN JUNIOR COLLEGE GEOGRAPHY COURSES IN THE FALL SEMESTER, 1950 BY STATES

California	2,244	Florida	75
Michigan	490	Alabama	71
Illinois	415	New Jersey	61
Missouri	358	Minnesota	55
Kansas	279	Arkansas	52
Mississippi	254	Arizona	46
Ohio	250	Idaho	40
Kentucky	232	North Dakota	40
Washington	220	Maine	37
Texas	112	Georgia	35
Iowa	110	Connecticut	30
North Carolina	106	Massachusetts	30
Utah	105	West Virginia	25
Tennessee	90	Maryland	23
Oklahoma	85	South Carolina	20
Pennsylvania	76	Indiana	17
Virginia	75	New York	10
Colorado	75	All others	Less than 10

that geography courses will enroll in each of the four semesters of junior college work the same number of students as in the fall semester of 1950, then only about 8 per cent of the present total junior college population of the United States, or about 24,000 students, will be exposed to geographic study.

Junior College Geography Instructors

Of the full-time and part-time geography instructors on the faculties of the junior colleges from which questionnaires were returned, six have Doctorate degrees and 33 have Master's degrees in geography. The bulk of the geography instructors reported advanced degrees in such fields as history, economics, education, and business administration in that order. A few schools reported that their geography instructors hold degrees in such unrelated fields as secretarial training, accounting, and physical education.

Only a small number of schools reported employing full-time geography teachers, indicating the paucity of geography courses offered. Part-time geography instructors teach, in addition, such courses as history, economics, geology, political science, sociology, business administration, education, etc.

Conclusion

Geographic education is important to the junior college program. It is important that the junior colleges of the United States include in their curricula those courses that will materially benefit all students, university preparatory and terminal alike. It holds even more true today than in the past, that the junior college in training for good citizenship must give to the future lawmaker an insight into human problems, a picture of human societies in their natural habitats, and an understanding of the differences from place to place.[6] Isaiah Bowman has pointed out that, "Whether men use the advantages of the earth for good or evil ends is a question in social and political morality. Science leaves the field at this point with a single challenging conclusion; the earth is big enough and rich enough for us all if we learn how to live in peace."[7] To attain this peace and glean these riches wisely requires the study of geography.

[6] See Clyde F. Kohn, *Geographic Approaches to Social Education,* Nineteenth Yearbook of the National Council for the Social Studies, 1948.

[7] Isaiah Bowman, "The New Geography," The Journal of Geography, Vol. XLIV, No. 6, September, 1945, p. 216.

The junior college has experienced a phenomenal growth in the American educational system in the past 50 years. Its functions, to democratize and popularize college education, to provide terminal education, to further the guidance program, and to provide better articulation between high school and university,[8] are unique in educational history. Geographic education, however, an integral part of the general education plan of the junior college, has been rather badly neglected. This may be due to the general lack of interest in the world about us, to a failure by school administrators to realize student needs in this dynamic world, or to the lack of professionally-trained geographers on the junior college level. It is hoped that this study, altho far from complete, will bring a fertile field to the attention of many junior college administrators and geographers alike.

[8] Rudyard K. Bent and Henry H. Kronenberg, *Principles of Secondary Education*, McGraw-Hill, New York, 1949, p. 174.

EDITORIAL NOTES AND NEWS

"Scandinavia in the Air Age" by Lon A. Phillips is the lead article in the October, 1950 issue of *World Airways Teacher*. This useful magazine is sent to teachers without charge. If interested write to George Gardner, Educational Director, Pan American World Airways, 28-19 Bridge Plaza North, Long Island City 1, New York.

It is reported that steel and automobiles are the giants of American manufacturing. When production is in full swing each industry employs about half a million workers.

Did you read "Education for World Understanding; Suggestions from World Service Abroad"?

Have you read "The Teaching of Geography in the Norwegian Grammar Schools" by Joan Clegg in the December 1950 issue of *Geography*?

This year is the first time a geographer appeared on the program of the Social Studies Program of the South Western Teachers Association. Dr. G. David Koch of Indiana State Teachers College spoke on "Geography and the Social Studies."

What has been your reaction to the memorandum prepared in June 1950 for the Council of the Royal Geographic Society by its Educational Committee and reprinted in the September 1950 issue of *Geography*?

Are you planning to visit Mexico's rival to the Grand Canyon, Barranca de Cobre? It can be reached by a three-day motor trip southward from New Mexico. The "hidden" canyon, cut by the Rio Urique, stretches from northeast to southwest about 300 air miles southwest of El Paso, Texas.

Have you been using the Geographical Quizzes published regularly in the *Pan-American World Airways Teacher*?

DR. HARRY O. LATHROP
1888-1951

The passing of Dr. Harry O. Lathrop, which occurred on May 11, suddenly and without warning at the close of a full day of teaching, leaves a distinct void, not only in the Illinois State Normal University where, since 1933, he served as head of the department of geography but also in the National Council of Geography Teachers to which he devoted many years of service. His untimely death, at the age of sixty-three years, came just six months after he had accepted the presidency of the National Council and at a moment when he was deeply involved in planning the program for the Pittsburgh meeting in November.

Dr. Lathrop had unusual capacity for arousing the interest and affection of his students and for imparting to them some of his own judicious enthusiasm for geography. He inspired a host of young men and women to make the teaching of geography their life work, and many of them are at present holding positions of responsibility in colleges and universities thruout the country.

Dr. Lathrop was a leader in community and civic affairs, a respected and sought-after member of the university faculty of which he was a part, and a mature scholar in the field of professional geography. To a host of individuals and organizations, all of which have profited from his generous gifts of time and counsel, the passing of Dr. Lathrop is a great loss. Quite particularly, his death robs the National Council of Geography Teachers of a president and faithful worker, a writer of numerous articles for the JOURNAL OF GEOGRAPHY and a champion of geography as a science in education.

EDNA M. GUEFFROY

THE NATIONAL COUNCIL AT WORK

The tentative program for the thirty-seventh meeting of the National Council of Geography Teachers in Pittsburgh, Pennsylvania, on November 23 and 24, 1951, follows.

Theme: **Contributions of Geographic Understandings in a Time of Crisis**

Friday Morning, November 23

FIRST GENERAL SESSION

(Dedicated to the Memory of Dr. Harry O. Lathrop)

9:30 A.M.-12:00 Noon **Urban Room**

Presiding, Dr. Clyde F. Kohn, Acting President of the National Council of Geography Teachers; Northwestern University.

In Memoriam.

Welcome, Dr. J. Warren Nystrom, Chairman, Department of Geography, The University of Pittsburgh; Miss Esther M. Kilhiffer, President, Pennsylvania Council of Geography Teachers.

Oil and the Near East, Dr. George B. Cressey, Chairman, Department of Geography, Syracuse University.

Geographic Implications of the North Atlantic Pact, Dr. Norman J. G. Pounds, Department of Geography, Indiana University.

The Shatter Belt in Relation to the East-West Conflict, Dr. George W. Hoffman, Department of Geography, University of Texas.

Southeast Asia, Dr. Jan O. M. Broek, Chairman, Department of Geography, University of Minnesota.

Friday Noon, November 23

LUNCHEON MEETING

State Coordinators at Work

12:00 Noon-1:20 P.M. **Monongahela Room**

Presiding, Miss M. Melvina Svec, Secretary of the National Council of Geography Teachers, State Teachers College, Oswego, New York.

Friday Afternoon, November 23

SECTIONAL MEETINGS

2:00-3:20 P.M.

Theme: **Implementing Geographic Understandings in a Time of Crisis**

Section A—In the Elementary Grades **132 Cathedral of Learning U. of Pittsburgh Campus**

Chairman, Dr. Frances M. Hanson, Department of Geography, The University of Pittsburgh.

Demonstration Lesson, Miss Irene Brockmyer, Emsworth Schools.

Topic, Pittsburgh's Geographical Blessings—Techniques in Review.

Section B—In the High School **232 Cathedral of Learning U. of Pittsburgh Campus**

Chairman, Dr. Zoe A. Thralls, Department of Geography, The University of Pittsburgh.

Demonstration Lesson, Mrs. Linnie B. James, Forest Hills Schools.

Topic, Introduction to the Study of a Country Thru Graphs and Statistics.

Friday Afternoon, November 23
2:00-3:30 P.M.

Section C—In the Undergraduate College Program **Cathedral of Learning**
U. of Pittsburgh Campus

Chairman, Dr. William E. Powers, Department of Geography, Northwestern University.

Panel Discussion, Physical Geography—Its Place in the Undergraduate Program in Geography. Dr. William E. Powers, Northwestern University; Dr. Joseph Van Riper, Chairman, Division of Social Science, State University of New York, Endicott, New York; Miss Irma Buell, Science Department, Joliet Township High School and Junior College, Joliet, Illinois.

Friday Afternoon, November 23
3:30-5:00 P.M.

Cathedral of Learning
U. of Pittsburgh Campus

SECOND GENERAL SESSION

Theme: National Council at Work

Presiding, Dr. Clyde F. Kohn, Acting President, National Council of Geography Teachers.

Secretary, Miss M. Melvina Svec, Secretary, National Council of Geography Teachers.

Research in Geographic Education Report, Dr. Henry J. Warman, Graduate School of Geography, Clark University.

Geographic Education in the Secondary School Report, Dr. Lillian Worley, Dept. of Geology and Geography, University of Tennessee.

Aviation and Geography Report, Dr. Richard L. Tuthill, Department of Geography, University of Kentucky.

Standards of Teacher Preparation and Certification Report, Miss Ina C. Robertson, Dept. of Geography, State Teachers College, Valley City, North Dakota.

Color Slide Production and Utilization Report, Dr. Fred E. Dohrs, Dept. of Geography, Wayne University, Detroit, Michigan.

Friday Afternoon, November 23
3:30-5:00 P.M.

Convocation of Gamma Theta Upsilon **Cathedral of Learning**
U. of Pittsburgh Campus

Friday Evening, November 23
7:00 P.M.

ANNUAL BANQUET

Presiding, Dr. Clyde F. Kohn, Acting President, National Council of Geography Teachers.

Announcement of Prizes, the George J. Miller and the J. Paul Goode Prizes and the Techniques in Teaching Geography in the Elementary School Level Prize by the editor of the JOURNAL.

Presentation of the Distinguished Service Award.

Address, Professor George J. Miller, Department of Geography, Indiana University.

Saturday Morning, November 24

THIRD GENERAL SESSION

9:00-10:30 A.M. **Urban Room**

Theme: **Developing Geographic Understandings in the Public Schools**

Chairman, Miss Ina Cullom Robertson, Second Vice-President, National Council of Geography Teachers, State Teachers College, Valley City, North Dakota.

Geography in the Elementary Schools of Pennsylvania, Dr. Laversia L. Powers, Chief, Elementary Education, Department of Instruction, Harrisburg, Pennsylvania.

Principles and Procedures in Secondary School Curriculum Improvement, Dr. Frederick L. Pond, Supervising Curriculum Consultant, Department of Public Instruction, Harrisburg, Pennsylvania.

Geographic Instruction in the Foreign Service Institute, Dr. Lloyd D. Black, Foreign Service Institute, Department of State, Washington, D.C.

Saturday Morning, November 24

GENERAL ASSEMBLY

10:45-12:15 **Urban Room**

Presiding, Dr. Clyde F. Kohn.

Secretary, Miss M. Melvina Svec.

Our Thirty-Seventh Year, Miss M. Melvina Svec, Secretary, National Council of Geography Teachers, State Teachers College, Oswego, New York.

Financial Status of the National Council, Dr. John H. Garland, Treasurer, National Council of Geography Teachers, University of Illinois.

Publications of the National Council, Miss M. Melvina Svec, Secretary, National Council of Geography Teachers, State Teachers College, Oswego, New York.

Plans for the Future of the National Council, Mrs. Katheryne T. Whittemore, Department of Geography, New York State College for Teachers, Buffalo, New York.

A New Administration, Dr. Floyd F. Cunningham, Department of Geography, Southern Illinois University, Carbondale, Illinois.

In Appreciation.

SPECIAL GROUP LUNCHEONS

12:30 P.M.

This time will be saved to permit luncheons arranged for special groups.

Saturday Afternoon, November 24

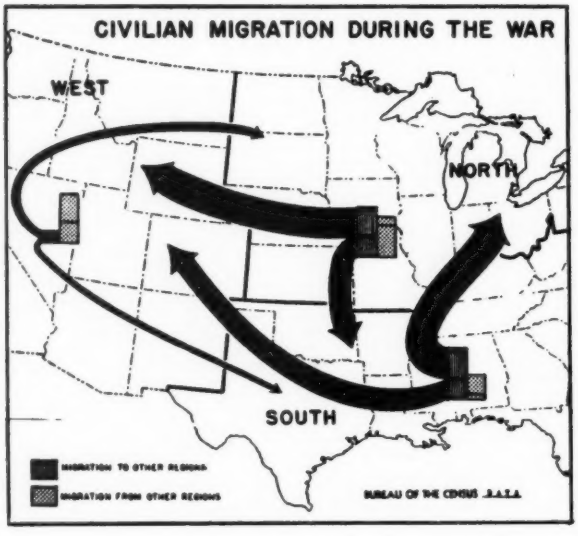
FIELD TRIP, 2:00 P.M.

Field Trip of City of Pittsburgh, to be arranged by the Department of Geography, The University of Pittsburgh.

CLYDE F. KOHN, *Acting President*

EDITORIAL NOTES AND NEWS

We often hear of human migration in other parts of the world and our curiosity is aroused at what we describe as phenomenal. At the same time we are unaware of similar migrations among our fellow citizens. Recent data compiled by the Census Bureau and the Bureau of Labor Statistics are very revealing. Between December, 1941 and March, 1945 3,580,000 people moved from one major region (see map) to another. From the North, particularly the Central Plains section, 910,000 went to the West and 640,000 to the South. From the South some 980,000 migrated to the North largely to the Great Lakes Industrial section, and 650,000 to the Pacific Coast. During the same period of years an additional 11,630,000 migrated from one location to another; 35.5 per cent moving from one state to another, and 64.4 per cent moving, chiefly to city centers within the same state. During a single year (April, 1948 to April, 1949) more than 8,300,000 people migrated from one job location to another. It is interesting to note that the South and North have suffered a net loss, and the West has had a net gain. Such a migration involves many complex problems of transportation, housing, education, recreation, medical service, standard of living, et cetera. Should new industries (jobs) be located in centers of population where workers are available? Should they be dispersed across the country in areas of small population but favorable for industrial development? Here are two debatable geographic and social problems for your students to consider.



Those of you who pioneered in offering in-service training in conversation education are undoubtedly happy to learn of "In-Service Training in Conservation Education" by Helen B. Ross. This is the Cornell Miscellaneous Bulletin No. 9. It may be secured by writing to New York State College of Agriculture, Cornell University, Ithaca, New York.

Have you seen a copy of "Checklist of Suggested Florida Resource-Use Education Materials" prepared by the Materials Committee of the Florida Resource-Use Education Committee? If interested write to the State Department of Education, Tallahassee, Florida.

The use of reclaimed rubber in the United States has increased steadily to a new all-time high, reflecting measures taken by industry to increase the rubber supply. Use of reclaimed rubber in 1950 amounted to 302,631 tons, exceeding the wartime high of 291,082 tons used in 1943. Reclaimed rubber usage amounted to 24.3 per cent of the new rubber used during 1950, as compared with 22.5 per cent in 1949.

GEOGRAPHICAL PUBLICATIONS

T. W. Freeman, **Ireland, Its Physical, Historical, Social and Economic Geography.** E. P. Dutton and Co., Inc., New York. xv and 536 pp. Appendix and Index. 8 plates, 2 folders, 96 maps. 1950. $6.75.

This text, apparently the first complete text on the geography of Ireland, effectively fills a gap of all too long standing. The author has done a painstaking job which is to be commended.

The book is divided into two parts, Part I treating with the island in general, and Part II approaching the subject regionally. The regional aspect seems to imply an urge by the author, conscious or otherwise, to preclude possible criticism from geographers in various quarters had he not introduced regionalism somewhere along the line. We suspect this situation because the author himself admits his rather tenuous basis for delineating the twelve regions. On page 262, we find the statement, "The regional boundaries, so often transitional, will at least help the reader to locate each area under discussion. . . ." As the criterion for the regional subdivision of Ireland, a combination of "their physical features and their agricultural regime" is given especial emphasis.

The author uses the term "Ireland" for the title of his book and "Eire" apparently only once in his discussion, a fact that is rather disconcerting, especially in view of his statement under the heading "A Note on Place Names" in which he recognizes the bilingual aspect of the nation and says, "In the choice of place names . . . the name in general use is employed whenever possible." One might have expected "Eire" to have replaced "Ireland."

Freeman treats a number of delicate matters in Irish national and international affairs with considerable skill and diplomacy. He does not hesitate to give appropriate weight to matters non-geographical where they tend to off-set the geographical. In Chapter VII, "Settlement and Society," he recognizes the complex of economic, political, social and religious phenomena in their play upon events. And so too does he give weight to the historical background.

Each chapter is concluded with an elaborate bibliography. Sketch "maps" are distributed thruout, and some 16 photographs are gathered at the beginning of the volume. This reviewer has often noted that the omission of indication of latitude and longitude removes a drawing, presumed to be a *map*, from the category of maps. Like so many other British writers, Freeman is guilty of committing this geographical error.

EUGENE VAN CLEEF

Ohio State University

John Donald Black, **The Rural Economy of New England.** Harvard University Press, Cambridge, Mass., 1950. xxiv and 796 pages. 155 charts and 123 tables. $7.50.

This book is an immensely impressive result of cooperative research. Mr. Black had the assistance of the Committee on Research in the Social Sciences and the Graduate School of Public Administration of Harvard University. We have used it as a reference work in a course in land utilization at Dartmouth College and have come to realize how much we have lacked just such a source-book in the past.

To give some idea of the mass of information in the book, I shall list some of its contents. There are thirty-six chapters dealing with topics as various as the natural endowment of New England, its industry, soils, dairy farming, maple products, recreational use of the land and "Trends, Prospects and Potentials." The list of charts, which includes many maps, is made up of 155 items, and there are 123 tables of statistics. There is a good index.

The purpose of the book is well stated by the author as: ". . . to take a small section of the United States—ordinarily called the New England region—and to analyze its rural economy in a way that will serve as a guide to its future." He emphasizes, however, that this is not a typical "regional planning" study since it deals only with the rural economy, which is taken in this case to mean, almost exclusively, the rural land-use economy.

Looking to the future the author sees important changes coming in New England farm-life. There will be a stepping-up of the rate of mechanization; family-size and other farms are now getting larger; increasing amounts of lime and fertilizer are being used; wages of farm-labor are rising, since they are strongly influenced by urban wage-rates; New England pastures are benefiting more and more from improved technology such as the use of seed mixtures; new techniques of woodland management are beginning to be applied. Finally the author sees the changes that are going on as a trend toward making farming ". . . less onerous, farm life more interesting, and more comfortable, and farm incomes more adequate; and hence making farming attractive to a larger fraction of the young people growing up on New England farms."

The Rural Economy of New England is an essential working tool for geographers concerned with land-utilization, the regional geography of North America or with agricultural geography. Let us hope that the time will come when cooperative works of this type will be guided by geographers, who by training and experience should be well-suited to synthesizing the wide variety of factual data needed in such a broad study.

TREVOR LLOYD

Dartmouth College

Smith, Guy-Harold, **Conservation of Natural Resources,** xii and 552 pages. John Wiley and Sons, Inc., New York, 1950. $6.00.

This book is a successor to the well-known book, Parkins and Whitaker, *Our Natural Resources and Their Conservation*. Like its predecessor the book has a number of associate authors. There are twenty different contributors, some writing more than one chapter.

There are advantages as well as some disadvantages in joint-authorship. In a subject covering such diverse fields as conservation, no one person can speak with authority on all phases of the subject. In this book each author speaks with some degree of authority in a special field of interest. This makes for greater authenticity and reliability for the various sections of the book. The disadvantages of joint-authorship have been largely overcome by the careful editing of the book by Professor Smith. He has been able to give all of the chapters a similarity in organization and appearance and a certain unity to the book altho contributed by different writers.

Seven of the authors to the book were contributors to the Parkins-Whitaker volume. Some of the authors of the original volume have died since its publication, and others have made commitments that prevented them from continuing as contributors to the new volume. The new contributors are well-known geographers or scientists in related fields. In some instances one may feel that the specialist has introduced techniques of his particular field not well understood by the reader. However, most parts of the book are free of any criticism on this score.

The format of the book has been changed. The dimensions of the volume are larger and have two columns to the page. Altho the book has almost one hundred fewer pages than its predecessor, there is no reduction in content.

The book is organized into eight parts and twenty-three chapters. All phases of conservation are covered. Many of the chapter headiags of the preceding volume are carried over into the new volume. In other cases, the chapter titles have been reworded,

but the central thought is the same. Some of the new contributors have written under the old headings. In all cases, the chapters have been rewritten, and materials have been brought down to the date of the preparation of the chapter. It is unfortunate that the book was timed to come out in 1950, because the latest census data available for most of the writers were for 1940. Where available, some contributors have used later data than the 1940 census figures.

The book is a worthy successor to the volume which it succeeds. In the reviewer's judgment, it is the best college text on the market. Anyone teaching a college course in Conservation will do well to examine the book before selecting a text.

H. O. LATHROP

Illinois State Normal University

Edward L. Ullman, **U. S. Railroads, Classified According to Capacity and Relative Importance.** Map. Scale approximately 1:4,400,000. Simmons-Boardman Publishing Co., New York, 1950. $2.50.

Teachers of commercial and industrial geography will be especially interested in this unique transportation map compiled by Professor Ullman of the University of Washington. From the standpoint of railway utilization, which is of principal concern to geographers, maps of the flow of railway traffic over the nation would be of great value. Because of the extreme complexity of railway freight movements however, the compilation of flow data is very costly (altho such data for individual lines are gathered for financial purposes). The Ullman map represents an approach to the problem by distinguishing six categories of railway lines on the basis of traffic-handling capacity as indicated by number of main tracks and type of signaling: 1. three- and four-track lines; 2. double-track lines; 3. single-track lines with CTC (Centralized Traffic Control, a system by which train movements are entirely directed from a single control board); 4. single-track lines with automatic block signals; 5. other important lines; 6. all other lines. Altho differences in actual traffic density on two lines of identical capacity may be considerable, especially as between the railways of the industrial Northeast, the South, and the Far West, the map does distinguish systematically the important traffic routes of the nation. Even more instructive is the quantity of detail portrayed on this map at a scale smaller than one inch to 65 miles. Since all railways are shown, the arrangement of various classes of lines in each state or region is a fascinating transportation study of its own. Comparison of a standard railroad map of Iowa's uniform network of intersecting lines with the Ullman map, which reveals Iowa's function as a "bridge" of parallel Chicago-Omaha routes, clearly illustrates the value of this new map.

The map is reproduced in blue, with red overprint showing types of signaling systems. Since single-, double-, and multiple-track railways are distinguished by width of lines, it is unfortunate that the map has suffered either in original drafting or in reproduction, with the result that line widths are poorly controlled. In other respects the map is cartographically attractive, as well as being an original and effective contribution to our fund of geographical materials.

WILLERT RHYNSBURGER

Indiana University

BOOKS AND PAMPHLETS RECEIVED

Geography in the Twentieth Century. Edited by Griffith Taylor. Philosophical Library, Inc., New York, 1951. x and 630 pages, 56 illustrations. $8.75.

The Polar Record. Edited by G. C. L. Bertram, B. B. Roberts, J. M. Wordie and J. D. M. Blyth. Scott Polar Research Institute, Cambridge, England, July, 1950. 50¢.

A. Wigfall Green. **The Epic of Korea.** Public Affairs Press, Washington, D.C., 1950. 128 pages, references and selected bibliography. $2.50.

L. Dudley Stamp and G. H. T. Kimble. **The World: A General Geography.** Longmans, Green & Co., Inc., New York, 1950. 711 pages, illustrations. $3.25.

Charles Darwin. **On the Origin of Species.** (Reprint of the First Edition). Philosophical Library, Inc., New York, 1951. xx and 426 pages. $3.75.

J. M. Mogey. **The Study of Geography.** (Home University Library of Modern Knowledge Series). Oxford University Press, New York, 1950. 164 pages, 18 illustrations. $2.00.

Idaho. (American Guide Series, Idaho Writers' Project). Oxford University Press, New York, 1950. 300 pages, illustrations. $4.50.

North Dakota. (American Guide Series, North Dakota Writers' Project). Oxford University Press, New York, 1950. 352 pages, illustrations. $4.50.

C. Daryll Forde. **Habitat, Economy and Society: A Geographical Introduction to Ethnology.** (Seventh Edition). E. P. Dutton & Co., Inc., New York, 1949. 472 pages, 108 illustrations.

Ralph C. Preston. **Teaching Social Studies in the Elementary School.** Rinehart & Co., Inc., New York, 1950. 337 pages, 40 maps and illustrations. $3.00.

Eric Fischer and Francis E. Elliott. **A German and English Glossary of Geographical Terms.** (Library Series No. 5). American Geographical Society, New York, 1950. vii and 111 pages.

Map Division. Departmental & Divisional Manuals No. 15, Library of Congress, Washington, D.C., 1950. 37 pages, diagrams. 30¢.

United States Atlases. The Library of Congress, Washington, D.C., 1950. 445 pages. $2.25.

Marketing Maps of the United States: An Annotated List. (Compiled by Walter W. Ristow). The Library of Congress, Washington, D.C., 1951. 52 pages. 40¢.

Indochina: A Bibliography of the Land and People. Library of Congress, Washington, D.C., 1950. 367 pages. $2.50.

A Water Policy for the American People and **Ten Rivers in America's Future.** (Volumes I and II of a three volume report of the President's Water Resources Policy Commission), Superintendent of Documents, Government Printing Office, Washington, D.C., 1950. Vol. I, 445 pages; Vol. II, 801 pages.